The Valiant Turtle and the Apple][+, //e, and //c

These instructions cover the operation of the Valiant Turtle with either the M.I.T. implementation of Logo (Terrapin and Krell) or Apple Logo I (L.C.S.I) and the Apple Super Serial card, Harvard Associates' serial card, or the Grappler/Grappler+ card.

Note that the Valiant Turtle will not work with Apple Logo I on the Apple //c computer. If you have an Apple //c computer, you must use either M.I.T. Logo or Apple Logo II. A separate ProDOS-based Valiant disk and instructions for use with Apple Logo II is available from Harvard Associates.

When inserting any interface card into your Apple //e or][+ to control the Valiant Turtle, do not place it in slot 3.

If you are using M.I.T.Logo, be sure to read page 5 after you set up the Valiant Turtle to find out about the procedures that control the Valiant in M.I.T. Logo. If you are using Apple Logo, be sure to read page 9 to find out about the procedures that control the Valiant in Apple Logo.

If the turtle does not respond after you have carried out the various instructions, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

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Please Note:

A number of Apple Logo packages have been distributed with a software error in the COPYDEF primitive. This causes the computer to hang when you load the Valiant Turtle Software. Please contact your local Apple dealer for a replacement copy of Apple Logo.

Starting the Valiant Turtle with M.I.T. Logo and the Apple Super Serial Card or Harvard Associates' Card

1. Switch your computer system off.

2. Set the small colored switches on the side of the communicator as follows:

   Switches 1 and 2: ON (down)
   Switches 3 and 4: OFF (up)

3. Set both small switches underneath the turtle to OFF (down).

4. On the Apple Super Serial Card only, set the jumper block to point towards MODEM.

5. Plug the end of the communicator cable into the round 5-pin socket at the back of the communicator.

6. Plug the other end of the communicator cable into the serial connector at the back of the computer.

7. Insert the M.I.T. Logo disk into drive A.

8. Switch on the computer to load Logo.

9. Plug the Valiant power adapter unit into a wall outlet.

10. Push the jack plug from the Valiant power adapter firmly into the power socket at the back of the communicator.

11. If the red light behind the communicator screen does not illuminate, disconnect the jack plug and try again. If the red light still does not come on, consult the Troubleshooting section in the *Valiant Turtle User Guide.*

12. Switch on the turtle.

13. Insert the Valiant Turtle Software disk into drive A.

14. Type *READ "MVAL.*

15. When Logo has loaded the MVAL file and the ? prompt returns, type *RESET.*

16. Answer the questions that appear on the screen about the type of interface and the slot it is in.

17. Make sure that the red light behind the communicator screen has gone off, indicating that initialization has taken place (i.e., that the communicator has synchronized itself with the computer). If not, consult the Troubleshooting section in the *Valiant Turtle User Guide.*

17. Your Valiant Turtle is now ready to use.

18. Remove the Valiant interface disk from drive A and insert your file disk.

Starting the Valiant with M.I.T. Logo and the Grappler/Grappler+ Cards

1. Switch your computer system off.

2. Set the small colored switches on the side of the communicator as follows:

   Switch 1: OFF (up)
   Switches 2, 3, and 4: ON (down)

3. Set both small switches underneath the turtle to OFF (down).

4. Plug the D-shaped connector at the end of the communicator cable into the parallel socket at the back of the communicator.

5. Disconnect any existing printer cables from your Grappler card and connect the other end of the communicator cable into the same connector with the ribbon cable exiting away from the board.

6. Insert the M.I.T. Logo disk into drive A.

7. Switch on the computer to load Logo.

8. Plug the Valiant power adapter unit into a wall outlet.

9. Push the jack plug from the Valiant power adapter firmly into the power socket at the back of the communicator.

10. If the red light behind the communicator screen does not illuminate, disconnect the jack plug and try again. If the red light still does not come on, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

11. Switch on the turtle.

12. Insert the Valiant Turtle Software disk into drive A.

13. Type *READ "MVALG*.

14. When Logo has loaded the MVAL file and the ? prompt returns, type *RESET*.

15. Answer the questions that appear on the screen about the type of interface and the slot it is in.

16. Make sure that the red light behind the communicator screen has gone off, indicating that initialization has taken place (i.e., that the communicator has synchronized itself with the computer). If not, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

17. Your Valiant Turtle is now ready to use.

18. Remove the Valiant interface disk from drive A and insert your file disk.

Starting the Valiant Turtle with M.I.T. Logo and the Apple //c

To use the Valiant with the Apple //c, you need the Apple //c Turtle Adapter. This cable can be obtained from Harvard Associates.

1.   Switch your computer system off.

2.   Set the small colored switches on the side of the Communicator as follows:

     Switches 1 and 2: ON (down)
     Switches 3 and 4: OFF (up)

3.   Set both small switches underneath the turtle to OFF (down).

4.   Plug the end of the communicator cable into the round 5-pin socket at the back of the communicator.

5.   Connect the other end of the communicator cable into the 25-pin connector of the Apple //c Turtle Adapter.

6.   Plug the Apple //c Turtle Adapter into either the modem or printer port at the back of the computer.

7.   Insert the M.I.T. Logo disk into drive A.

8.   Switch on the computer to load Logo.

9.   Plug the Valiant power adapter unit into a wall outlet.

10. Push the jack plug from the Valiant power adapter firmly into the power socket at the back of the communicator.

11. If the red light behind the communicator screen does not illuminate, disconnect the jack plug and try again. If the red light still does not come on, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

12. Switch on the turtle.

13. Insert the Valiant Turtle Software disk into drive A.

14. Type *READ "MVAL.*

15. When Logo has loaded the MVAL file and the ? prompt returns, type *RESET.*

16. When the computer asks which interface card is installed in your computer, type *B* to select the Apple Super Serial Card.

17. Next, type *2* as the slot number.

18. Type *y* to continue.

19. Make sure that the red light behind the communicator screen has gone off, indicating that initialization has taken place (i.e., that the communicator has synchronized itself with the computer). If not, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

20. Your Valiant Turtle is now ready to use.

21. Remove the Valiant interface disk from drive A and insert your file disk.

Valiant Turtle Commands in M.I.T. Logo

Movement commands in M.I.T. Logo are prefixed by a "T" (for Turtle) to distinguish them from the primitives that move only the screen turtle.

TFD *n*   Moves the Valiant Turtle forward *n* steps.

TBK *n*   Moves the Valiant Turtle back *n* steps.

TRT *n*   Pivots the Valiant Turtle right *n* degrees.

TLT *n*   Pivots the Valiant Turtle left *n* degrees.

TPU   Puts the pen in the up position.

TPD   Puts the pen down so that the Valiant Turtle will leave a trail.

When you first load the MVAL file, the commands that control the Valiant Turtle also affect the screen turtle. You can "turn off" either the screen turtle or the Valiant Turtle so that one will remain stationary while the other continues to move. For example, you can write a program with the help of the screen turtle, debug it by having the Valiant Turtle and the screen turtle perform simultaneously, and run the finished version with the Valiant alone.

Use a MAKE statement to control turtle movement. To allow a turtle to move, MAKE it "TRUE. To turn off a turtle, MAKE it "FALSE. For example:

To control the Valiant Turtle only, type:

MAKE "FLOOR "TRUE
MAKE "SCREEN "FALSE

To control the screen turtle only, type:

MAKE "FLOOR "FALSE
MAKE "SCREEN "TRUE

To control both simultaneously, type:

MAKE "FLOOR "TRUE
MAKE "SCREEN "TRUE

Adjusting Valiant Turtle Turns in Terrapin Logo

The Logo procedures that make the Valiant turn are programmed at a pre-set calibration. However, because each Valiant has its own individual personality, a turn command, such as TRT 90, may turn the Valiant slightly more or slightly less than 90 degrees. If your turtle makes inaccurate turns in Terrapin Logo, you can change the turning calibrations by following the instructions below.

1.   Start with a fresh Logo by either typing *GOODBYE* or by restarting the system.

2.   Type *READ "MVAL* and press the Return key.

3.   Type *EDIT RESET* and Return.

4.   Change the variables CALIBTURNR and CALIBTURNL to something other than their default values of 570. Make the values larger to move the Valiant farther; make the values smaller to move the Valiant less.

5.   Define the new RESET procedure with Ctrl C.

6.   Type *RESET* and Return to install the new values of CALIBTURNR and CALIBTURNL.

7.   Test your new values on the Valiant.

8.   Make adjustments to the values until you are satisfied. Remember to execute the RESET procedure each time you change the values.

9.   Save the new file on your Valiant Turtle Control Software disk by typing *SAVE "NEWMVAL*.

10. Next, type *DOS [UNLOCK MVAL.LOGO]* and press Return.

11. Type *DOS [RENAME NEWMVAL.LOGO,MVAL.LOGO]* and press Return.

12. Type *DOS [LOCK MVAL.LOGO]* and press Return.

13. The new calibrations are now permanent and will take effect each time you load the new MVAL file.

Starting the Valiant Turtle with Apple Logo and the Apple Super Serial Card or Harvard Associates' Card

1. Switch your computer system off.

2. Set the small colored switches on the side of the communicator as follows:

    Switches 1 and 2: ON (down)
    Switches 3 and 4: OFF (up)

3. Set both small switches underneath the turtle to OFF (down).

4. On the Apple Super Serial Card only, set the jumper block to point towards MODEM.

5. Plug the end of the communicator cable into the round 5-pin socket at the back of the communicator.

6. Plug the other end of the communicator cable into the serial connector at the back of the computer.

7. Insert the Apple Logo disk into drive A.

8. Switch on the computer to load Logo.

9. When Logo asks you to put your file disk into the disk drive, insert the Valiant Software disk and press the Return key.

10. Plug the Valiant power adapter unit into a wall outlet.

11. Push the jack plug from the Valiant power adapter firmly into the power socket at the back of the communicator.

12. If the red light behind the communicator screen does not illuminate, disconnect the jack plug and try again. If the red light still does not come on, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

13. Switch on the turtle.

14. Insert the Valiant Turtle Software disk into drive A.

15. Type *LOAD "VALSSC*.

16. Answer the questions that appear on the screen about the type of interface and the slot it is in.

17. Make sure that the red light behind the communicator screen has gone off, indicating that initialization has taken place (i.e., that the communicator has synchronized itself with the computer). If not, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

17. Your Valiant Turtle is now ready to use.

18. Remove the Valiant interface disk from drive A and insert your file disk.

Starting the Valiant with Apple Logo and the Grappler/Grappler+ Cards

1. Switch your computer system off.

2. Set the small colored switches on the side of the communicator as follows:

   Switch 1: OFF (up)
   Switches 2, 3, and 4: ON (down)

3. Set both small switches underneath the turtle to OFF (down).

4. Plug the D-shaped connector at the end of the communicator cable into the parallel socket at the back of the communicator.

5. Disconnect any existing printer cables from your Grappler card and connect the other end of the communicator cable into the same connector with the ribbon cable exiting away from the board.

6. Insert the Apple Logo disk into drive A.

7. Switch on the computer to load Logo.

8. When Logo asks you to put your file disk into the drive, insert the Valiant Turtle Software disk and press the Return key.

9. Plug the Valiant power adapter unit into a wall outlet.

10. Push the jack plug from the Valiant power adapter firmly into the power socket at the back of the communicator.

11. If the red light behind the communicator screen does not illuminate, disconnect the jack plug and try again. If the red light still does not come on, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

12. Switch on the turtle.

13. Insert the Valiant Turtle Software disk into drive A.

14. Type *LOAD "VALGRP.*

15. Answer the questions that appear on the screen about the type of interface and the slot it is in.

16. Make sure that the red light behind the communicator screen has gone off, indicating that initialization has taken place (i.e., that the communicator has synchronized itself with the computer). If not, consult the Troubleshooting section in the *Valiant Turtle User Guide*.

17. Your Valiant Turtle is now ready to use.

18. Remove the Valiant interface disk from drive A and insert your file disk.

Valiant Turtle Commands in Apple Logo

In addition to the normal Apple Logo primitives, some new procedures have been created for the Valiant Turtle.

TURTLEOFF	Tells the Valiant Turtle to ignore commands. Commands are only followed by the screen turtle.
TURTLEON	Tells the Valiant Turtle to follow commands again.
ANGLE	Outputs a number representing the calibration of a Valiant Turtle angle. The default value of ANGLE is 1.
SETANGLE *n*	Allows you to set the calibration of a Valiant Turtle angle where *n* is a number representing the calibration of the angle.
DIST	Outputs a number representing the size of a Valiant Turtle step. The default value of DIST is 10.
SETDIST *n*	Allows you to set the calibration of a Valiant Turtle step where *n* is a number representing the size of the step.

Adjusting Turtle Angles and Distances in Apple Logo

The Logo procedures that make the Valiant turn and move are programmed at pre-set levels. However, because each Valiant has its own individual personality, a turn command, such as RT 90, may turn the Valiant slightly more or slightly less than 90 degrees. Similarly, a movement command , such as FD 10, may not move the Valiant as far forward as you might like.

You can change the calibrations of either Valiant turns or distances from within Logo. Experiment until you find the proper calibrations. To make the changes permanent, you can save them on the disk.

Adjusting the Valiant's Angle and Distance Calibrations

1. Set up the Valiant and load the Valiant Control Software into your computer.

2. To adjust the angle calibration, type *SETANGLE n*, where *n* is the number for the new angle calibration. The default value of SETANGLE is 1. Make the value larger to have the Valiant turn farther; make the value smaller to have the Valiant turn less.

3. Test the new value on the Valiant and make adjustments until you are satisfied.

4. To adjust the distance calibration, type *SETDIST n*, where *n* is the number for the new distance calibration. The default value of SETDIST is 10. Make the value larger to move the Valiant farther; make the value smaller to move the Valiant less.

5. Test the new value for SETDIST and make adjustments until you are satisfied.

Saving the Calibrations on the Disk

1. Start with a fresh Logo by restarting the system.

2. Insert the Valiant Turtle Software disk into the disk drive.

3. Type *LOAD "VALSSC.PROCS* and press the Return key *twice* in quick succession. The disk drive light will turn on and off several times as the computer accesses the disk drive.

4. When the ? cursor returns, an extra cursor will be printed on the screen.

5. To reset the angle calibration, change the value of SETANGLE to the appropriate number.

6. To reset the distance calibration, change the value of SETDIST to the appropriate number.

7. Erase the old file by typing *ERASEFILE "VALSSC.PROCS*.

8. Save the new file and values by typing *SAVE "VALSSC.PROCS*.